

REMARKS

Applicants respectfully request the Examiner to reconsider the present application in view of the following remarks.

Status of the Claims

Claims 1-2 and 6-7 are pending in the present application. In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Issues under 35 U.S.C. § 103(a)

The Examiner has rejected claims 1, 2, 6, and 7 under 35 U.S.C. § 103(a) as being unpatentable over Chappelow et al. '759 (US 6,610,759).

Applicants respectfully traverse, and reconsideration and withdrawal of this rejection are respectfully requested.

The Present Invention

Claim 1 recites:

A photocurable dental enamel adhesive composition comprising:

(A) a radically polymerizable monomer having at least one acid group selected from the group consisting of 2-(meth)acryloyloxyethylsuccinic acid, 2(meth)acryloyloxyethylmaleic acid, 2-methacryloyloxyethylhexahydrophthalic acid and 2-methacryloyloxyethylphthalic acid;

(B) a monofunctional radically polymerizable monomer having a molecular weight of 220 or less and a boiling point of 60°C/10 mmHg or more;

(C) a carboxylic ester group-containing aromatic amine;

(D) a photopolymerization initiator; and

(E) a bifunctional radically polymerizable monomer, wherein

when the total amount of the above components (A), (B), (C), (D) and (E) is 100 parts by weight, the amount of the component (A) is 10 to 40 parts by weight, the amount of the component (B) is 2 to 30 parts by weight, the amount of the component (C) is 0.3 to 3 parts by weight, the amount of the component (D) is 0.1 to 1 part by weight, and the amount of the component (E) is 50 to 80 parts by weight.

Distinctions over the Cited Prior Art

In the outstanding Office Action, the Examiner states, “Chappelow et al teach all the claimed components and amounts encompassing the instant amount” (page 2). Applicants respectfully traverse the Examiner’s interpretation.

The adhesive composition of Chappelow et al. ‘759 includes a mixture of a cationically polymerizable component (hereinafter “component (a)”), an acidic component (hereinafter “component (b)”), and an initiator capable of initiating cationic polymerization (hereinafter “component (c)”) (col. 2, lines 35-38).

Component (a) is cationically polymerizable and differs from the monomers (A), (B), and (E) of the composition of the present invention, which are radically polymerizable. In fact, a large number of examples of the component (a) are enumerated in Chappelow et al. ‘759 (col. 3, line 7 to col. 6, line 13) but differ from the examples of the monomers (A), (B), and (C) of the present invention.

Furthermore, 2-(methacryloyloxy)ethyl maleate (MAEM) and 2-hydroxyethylmethacrylate (HEMA), allegedly corresponding to monomers (A) and (B) of the adhesive composition of the present invention, are disclosed as examples of the acidic component of Chappelow et al. ‘759, respectively (col. 6, lines 58-61). However, Chappelow et al. ‘759 disclose that the content of the acidic component is about 0.1 to 30 wt%. Chappelow et al. ‘759 fail to disclose that the content of monomers (A) and (B) of the adhesive composition of the present invention are 10 to 40 parts by weight and 2 to 30 parts by weight, respectively.

Moreover, camphorquinone (CQ), which allegedly corresponds to component (D) of the present invention, is disclosed as a sensitizer for the second component of the above ternary system of Chappelow et al. ‘759 (col. 12, lines 31-32), and ethyl p-dimethylaminobenzoate (EDMAB), allegedly corresponding to component (C) of the present invention, is disclosed as an electron donor for the third component (col. 14, lines 39-42).

In the examples of Chappelow et al. '759, a composition comprising 2 wt% of CQ and 0.05 wt% of EDMAB is disclosed. The content of CQ is outside the range (0.1 to 1 part by weight) of the component (D) of the present invention, and the content of EDMAB is outside the range (0.3 to 3 parts by weight) of the component (C) of the present invention. Since this ternary system of Chappelow et al. '759 is a cationic initiator, it differs from the photopolymerization initiator (D) and the carboxylic ester group-containing aromatic amine (C) of the present invention in function.

With respect to the component (E) of the present invention, Chappelow et al. '759 do not disclose the content of the monomer nor provide examples in which the monomer is contained. That is, Chappelow et al. '759 fail to disclose that the content of the component (E) is 50 to 80 parts by weight.

To establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be disclosed by the prior art or be known in the art. As discussed above, Chappelow et al. '759 fail to disclose all of the claim limitations of independent claim 1, and those claims dependent thereon. That is, the prior art relied upon by the Examiner does not recite components (A), (B), (C), (D), and (E) in the claimed amounts. Therefore, a *prima facie* case of obviousness has not been established, and withdrawal of the outstanding rejection is respectfully requested.

For the reasons given above, the reference does not render the present invention obvious because the cited reference or the art as a whole does not disclose at least one feature of the present invention and its effects. Furthermore, the cited reference or the knowledge in the art provides no reason or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed. Any contentions of the USPTO to the contrary must be reconsidered at present.

CONCLUSION

A full and complete response has been made to all issues as cited in the Office Action. Applicants have taken substantial steps in efforts to advance prosecution of the present application. Thus, Applicants respectfully request that a timely Notice of Allowance issue for the present case clearly indicating that each of claims 1-2 and 6-7 are allowed and patentable under the provisions of title 35 of the United States Code.

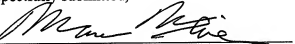
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad M. Rink, Reg. No. 58,258 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated:

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Respectfully submitted,

By 

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